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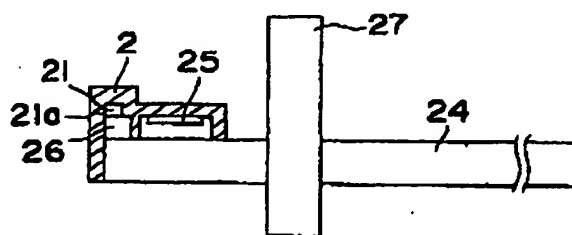
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(54) **Semiconductor laser device.**

(57) A semiconductor laser device includes a base, a semiconductor laser chip and a resin layer enclosing the laser chip. The base may have a monitor photodiode mounted thereon in the vicinity of the laser chip. The resin layer enclosing the laser chip or both of the laser chip and the monitor diode chip is made of a single synthetic resin having a thickness not greater than 500µm and also having a surface substantially parallel to an outwardly oriented beam emitting end face of the laser chip.

Fig. 4



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
X	PATENT ABSTRACTS OF JAPAN vol. 14, no. 359 (E-959) 3 August 1990 & JP-A-02 125 688 (SONY CORP)	1-3	H01S3/025
A	* abstract *	6,8	
A	EP-A-0 366 472 (MATSUSHITA) * the whole document *	1-5	
A	PATENT ABSTRACTS OF JAPAN vol. 10, no. 54 (E-385) 4 March 1986 & JP-A-60 206 185 (TOSHIBA KK) * abstract *	1-3	
Y	DE-A-38 10 899 (MITSUBISHI DENKI KK)	6	
A	* the whole document *	1-5	
Y	PATENT ABSTRACTS OF JAPAN vol. 10, no. 363 (E-461) 5 December 1986 & JP-A-61 159 787 (MATSUSHITA ELECTRIC IND CO LTD) * abstract *	6	
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Y	* the whole document *	15	
A		6,11-13	
X	US-A-5 130 531 (ITO ET AL)	16	
Y	* column 5, line 41 - column 7, line 62; figure 1 *	15	
X	PATENT ABSTRACTS OF JAPAN vol. 10, no. 6 (E-389) 18 March 1986 & JP-A-60 217 687 (HITACHI SEISAKUSHO KK)	9,13	
A	* abstract; figure 2 *	1,10,14	
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 September 1994	Examiner Claessen, L
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : prior art document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

EP 0 FORM 1503 (01.92) (P/E/C)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

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- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
6 X A P,X P,A	JP-A-4 311 828 (HITACHI LTD) * figure 1 * & PATENT ABSTRACTS OF JAPAN vol. 17, no. 132 (P-1504) 18 March 1993 * abstract *	16 15 16 15	
6 A	--- PATENT ABSTRACTS OF JAPAN vol. 13, no. 50 (P-823) 6 February 1989 & JP-A-63 241 729 (NEC HOME ELECTRONICS LTD) * abstract *	5,7,9,14	
6 A	--- PATENT ABSTRACTS OF JAPAN vol. 7, no. 186 (E-193) 16 August 1983 & JP-A-58 090 792 (MITSUBISHI DENKI KK) * abstract *	5,7,9,14	
6 A	--- PATENT ABSTRACTS OF JAPAN vol. 12, no. 375 (E-666) 7 October 1988 & JP-A-63 124 483 (SHINKO ELECTRIC IND CO LTD) * abstract *	9,12	
2 A	--- PATENT ABSTRACTS OF JAPAN vol. 15, no. 118 (E-1048) 22 March 1991 & JP-A-03 008 385 (MATSUSHITA ELECTRIC IND CO LTD) * abstract *	1,6,15,16	
2 A	--- PATENT ABSTRACTS OF JAPAN vol. 12, no. 196 (E-618) 7 June 1988 & JP-A-62 296 593 (NEC CORP) * abstract *	1,3,4,6	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 September 1994	Examiner Claessen, L
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			



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Application Number
EP 93 31 0535

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
A	<p>PATENT ABSTRACTS OF JAPAN vol. 9, no. 126 (E-318) 31 May 1985 & JP-A-60 012 782 (SUMITOMO DENKI KOGYO KK) * abstract *</p> <p>-----</p>	1,6,8	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 5)
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		21 September 1994	Claessen, L
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure F : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, not published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>A : number of the same patent family, corresponding document</p>			

EPO FORM 1501 (01/92) (P. 01/92)



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LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-5 : A semiconductor laserchip mounted on a base and enclosed by a resin layer with a limited thickness and a surface being parallel to the light emitting laserfacet.
2. Claims 6-8 : A semiconductor laserchip and a monitoring photodiode mounted on a base and enclosed by a resin layer, in which the base allows a special relative orientation between the laser and the photodiode.
3. Claims 9-14 : A semiconductor laserchip and a monitoring photodiode mounted on a base and enclosed by a resin layer, and comprising a protective member integrally fitted to said base.
4. Claim 15 : A semiconductor laserchip, a monitoring photodiode and a second photodiode, including a hologram for guiding reflected laserlight onto said second photodiode, said laserchip and photodiodes enclosed by a resin layer.
5. Claim 16 : A semiconductor laserchip, a monitoring photodiode and a second photodiode, mounted on a stem and enclosed by a cap comprising a hologram for guiding reflected laserlight onto said second photodiode.